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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,490	09/08/2003	E. Scott Hagermoser	59004US002	2018
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3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427				MOON, SEOKYUN
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/658,490	HAGERMOSER ET AL.	
	Examiner	Art Unit	
	SEOKYUN MOON	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 18 June 2008.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-7,9-16,23-40 and 42 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-7,9-16,23-40, and 42 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 08 September 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

1. As a preliminary matter, Examiner thanks the Applicant's representative, Nick Baumann, for the courtesies extended in the phone interview held on June 11, 2008.

Response to Arguments

2. The Applicant's arguments filed on June 18, 2008 have been fully considered.

Regarding claim 1, the Applicant [Remarks: pg 9 2nd paragraph] pointed out that the references cited in the previous Office Action does not teach an airbag cover having an airbag surface, a capacitive touch sensor disposed between the airbag and the airbag cover, the touch sensor configured so that a touch applied on the airbag surface of the airbag cover forms a circuit through the airbag surface to the touch sensor.

Examiner respectfully disagrees.

As explained in the previous Office Action, the combination of the cited references teaches the top surface of the capacitive touch sensor of Gillespie being the top surface of the steering wheel. Since the top surface of the steering wheel covers the airbag included in the steering wheel, the top surface of the steering wheel is a part of an airbag cover having an airbag surface. Furthermore, since the combination of the cited references teaches the components of the capacitive touch sensor being disposed between the top surface of the steering wheel and the airbag, the combination of the cited references teaches the capacitive touch sensor being disposed between the airbag and the airbag cover. Also, the capacitive touch sensor allows capacitive coupling between the touch and the touch sensor when the front surface of the

capacitive touch sensor is touched, and thus the touch on the airbag surface forms a circuit through the airbag surface to the touch sensor.

The Applicant [Remarks: pg 9 3rd paragraph] pointed out that none of the cited references teaches the sensor being configured to reduce interference with airbag deployment.

Examiner respectfully disagrees.

One of the cited references (US 7,084,859, herein after, “*Pryor*”) teaches a concept of implementing a capacitive touch sensor in a steering wheel of a vehicle. Since it is required for any car to deploy the airbag included in a steering wheel when it is necessary, regardless of the type of the components or parts of the car included in the steering wheel, *Pryor* inherently teaches a concept of configuring the capacitive touch sensor (which is a component/part of the vehicle included in the steering wheel) to reduce interferences with the airbag deployment. Examiner respectfully submits that the claim does not disclose a specific structure or a component of the capacitive touch sensor enabling airbag deployment with reduced interference, but merely discloses a concept of configuring the sensor to reduce the interference with airbag deployment. And Examiner believes that such concept is inherently taught by the cited reference.

Regarding claim 28, the Applicant [Remarks: pg 10 1st paragraph] pointed out that none of the cited references teaches the capacitive touch sensor being integrated with the surface in the vehicle and configured to enable unimpeded safety functionality of the surface in the vehicle.

Examiner respectfully disagrees.

As explained in the previous Office Action, the combination of the cited references teaches the top surface of the capacitive touch sensor of *Gillespie* being the top surface of the steering wheel. Since the top surface of the steering wheel is a part of the surface of the vehicle,

the combination of the cited references teaches the capacitive touch sensor being integrated with the surface in the vehicle. Examiner respectfully submits that the Applicant's arguments regarding the sensor being configured to enable unimpeded safety functionality of the surface in the vehicle are not persuasive for the similar reason explained with respect to the Applicant's arguments regarding claim 1.

Regarding claim 23, the Applicant [Remarks: pg 10 5th paragraph] pointed out that none of the cited references teaches configuring the capacitive touch sensor to minimally interface with airbag deployment.

Examiner respectfully submits that the Applicant's arguments are not persuasive for the similar reason explained with respect to the Applicant's arguments regarding claim 1.

Regarding the newly presented claim 42, the Applicant [Remarks: pg 11 4th paragraph] pointed out that none of the cited references teaches the capacitive touch sensor being embedded in the airbag cover.

Examiner respectfully disagrees.

As explained in the previous Office Action, the top surface of the capacitive touch sensor is the airbag cover. Thus, all other components of the capacitive touch sensor is embedded in the airbag cover.

Accordingly, Examiner respectfully submits that the Applicant's arguments regarding newly amended and added subject matter disclosed in the claims are not persuasive.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-7, 9-11, 13-16, 28-38, and 42** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gillespie (US 7,109,978) and Pryor (US 7,084,859), and further in view of Neuman (US 5,942,815).

As to **claim 1**, Gillespie teaches a touch input device (“*capacitive touch sensor*”) [abstract lines 1-3] for interacting with electronic systems (“*computing devices*”) [col. 1 lines 28-33], comprising:

a surface (“*insulating layer 36*”) [fig. 2d] accessible to and touchable by an user of the input device [col. 6 lines 30-32]

a capacitive touch sensor (“*capacitive touch sensor pad*”) configured so that a touch applied on the surface (“*insulating layer 36*”) of the input device forms a circuit through the surface to the touch sensor (the capacitive coupling between the touch and the touch sensor is equivalent to a capacitor being existed between the touch and the touch sensor) that allows capacitive coupling between the touch and the touch sensor through the surface [col. 6 lines 28-32] [fig. 2d], the touch sensor adapted for connecting to a controller (“*arithmetic unit*”) that uses signals generated by the capacitive coupling to interact with electronic systems [col. 54 lines 29-37].

Gillespie does not expressly teach the touch input device to interact with multiple electronic systems included in the vehicle.

However, Pryor teaches a concept of implementing a capacitive touch panel (“10”) [fig. 1c] used for interacting with multiple electronic systems [col. 56 lines 22-24] included in a vehicle [abstract lines 1-6], in a steering wheel of the vehicle, which includes an airbag [fig. 1c] [col. 7 lines 26-30 and col. 17 lines 13-17].

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Pryor’s concept of using a capacitive touch panel as an inputting means for interacting with multiple electronic systems included in a vehicle and of implementing the capacitive touch panel in a steering wheel, to the touch input device of Gillespie, in order to provide fast response of sensing while maintaining immunity to high levels of electrical interference for a controlling means for interacting with multiple electronics of a vehicle.

Gillespie [Gillespie: fig. 2d] as modified by Pryor teaches the capacitive touch sensor being disposed behind an airbag cover (note that since, in the combination of Gillespie and Pryor, the “*insulating layer 36*” is the most front surface of the steering wheel and the airbag is included in the steering wheel, the “*insulating layer 36*” is a part of the airbag cover, which is an airbag surface).

Gillespie as modified by Pryor does not expressly disclose the capacitive touch sensor to be disposed between an airbag and an airbag cover.

However, Neuman teaches a structure of placing a capacitive sensor between an airbag (“704”) and an airbag cover layer (“*cover layer 702*”) [fig. 7].

It would have been obvious to one of ordinary skill in the art at the time of the invention to place the capacitive touch sensor of the input device of Gillespie as modified by Pryor between an airbag and an airbag cover, as taught by Neuman, in order to allow the user of the

device of Gillespie as modified by Pryor to activate the input device without activating the airbag of the steering wheel.

Gillespie as modified by Pryor and Neuman inherently teaches the capacitive touch sensor being configured to reduce interference with airbag deployment since it is required for any car to deploy the airbag included in a steering wheel when it is necessary, regardless of the type of the components or parts of the car included in the steering wheel and thus Pryor inherently teaches a concept of configuring the capacitive touch sensor (which is a component/part of the vehicle included in the steering wheel) to reduce interferences with the airbag deployment.

As to **claim 2**, Gillespie as modified by Pryor and Neuman teaches the vehicle being an automobile [Pryor: fig. 1c].

As to **claim 3**, Gillespie as modified by Pryor and Neuman teaches an airbag cover [Neuman: fig. 7].

Gillespie as modified by Pryor and Neuman does not expressly disclose the airbag cover to include a surface comprising a relief pattern making the designated area.

However, examiner takes official notice that it is well known in the art at the time of the invention to include a relief pattern making a designated area, such as writing a text “*airbag*” on the surface of an airbag cover.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the surface of the airbag of Gillespie as modified by Pryor and Neuman to include a relief pattern making a designated area, in order to allow the device user of the device to recognize the existence of the airbag easily.

As to **claim 4**, Gillespie as modified by Pryor and Neuman teaches the airbag cover being on a steering wheel [Pryor: fig. 1c].

As to **claims 5 and 7**, Gillespie as modified by Pryor and Neuman does not teach the steering wheel incorporating additional touch sensors or additional capacitive sensors being positioned between the airbag and the airbag cover.

However, the courts have been held that a mere duplication of parts for a multiplied effect is generally recognized as being within the level of ordinary skill in the art. *St. Regis Paper Co. v. Bemis Co., Inc.*, 193 USPQ 8, 11 (7th Cir. 1977).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement additional capacitive touch sensors between the airbag and the airbag cover in the steering wheel of the device of Gillespie as modified by Pryor and Neuman to provide additional access to various electrical subsystems for the occupants of a vehicle.

As to **claim 6**, Gillespie as modified by Pryor and Neuman does not teach the airbag cover being on a passenger side of the vehicle.

However, the courts have been held that a mere change of location of parts is generally recognized as being within the level of ordinary skill in the art. *In re Japikse*, 86 USPQ 70 (CCPA 1950).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include an airbag cover and an airbag on a passenger side of the vehicle of Gillespie as modified by Pryor and Neuman to provide additional safety to the passenger of the vehicle.

As to **claim 9**, Gillespie teaches the capacitive touch sensor being an x-y sensor [abstract lines 1-3].

As to **claims 10 and 11**, Gillespie as modified by Pryor and Neuman does not expressly disclose the capacitive touch sensor being a quadrant segmented sensor or a scroll bar sensor.

However, since the applicants have failed to disclose that specifying the type of the capacitive touch sensor as a quadrant segmented sensor or a scroll bar sensor provides an advantage, is used for a particular purpose, or solves a state problem, it is an obvious matter of design choice to specify the type of the touch sensor as a quadrant segmented sensor, or a scroll bar sensor.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use any one of a x-y sensor, a quadrant segmented sensor, and a scroll bar sensor, as the capacitive touch sensor since any type of the sensor would perform equally well at processing capacitive touch-input information.

As to **claims 13-15**, Gillespie teaches the capacitive touch sensor comprising a substrate (“*substrate 24*”) [fig. 2d].

Gillespie does not expressly teach a substrate of a capacitive touch sensor to comprise paper, cloth, or plastic.

However, since the applicants have failed to disclose that specifying the substrate of the capacitive touch sensor to be comprised of any one of paper, cloth, or plastic provides an advantage, is used for a particular purpose, or solves a state problem, it is an obvious matter of design choice to specify the substrate of the capacitive touch sensor to comprise any one of paper, cloth, or plastic.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use any one of nonconductive materials such as paper, cloth, and plastic for the

substrate of the capacitive sensor since any one of nonconductive material would perform equally well at preventing particles being transferred or leaked from the capacitive touch sensor

As to **claim 16**, Gillespie as modified by Pryor and Neuman teaches the airbag cover providing a substrate (Gillespie: “*insulating layer 36*”) for the capacitive touch sensor [Gillespie: fig. 2d].

As to **claim 28**, all of the claim limitations have already been discussed with respect to the rejection of claim 1 except for that the presence of the touch sensor maintains the look, feel, and functionality of the surface as if the touch sensor was excluded and the capacitive touch sensor is integrated with the surface in the vehicle and configured to enable unimpeded safety functionality of the surface in the vehicle (since it is required for any car to deploy the airbag included in a steering wheel when it is necessary, regardless of the type of the components or parts of the car included in the steering wheel and thus Pryor inherently teaches a concept of configuring the capacitive touch sensor to enable unimpeded deployment of the airbag).

Gillespie teaches that the presence of the touch sensor maintains the look, feel, and functionality of the surface as if the touch sensor was excluded since the surface (“*insulating layer 36*”) covers the whole portion of the touch sensor [fig. 2d].

Gillespie as modified by Pryor teaches the capacitive touch sensor being integrated with the surface in the vehicle [Pryor: fig. 1c] and configured to enable unimpeded safety functionality of the surface in the vehicle.

As to **claims 29, 30, 32, and 33**, Gillespie as modified by Pryor and Neuman [Pryor: fig. 1c] teaches the surface being a surface of a steering wheel (Pryor: "10"), a dashboard (Pryor: "13"), a center console (Pryor: "11"), or an arm rest (Pryor: "14").

As to **claims 31 and 34**, Gillespie as modified by Pryor and Neuman does not expressly disclose the surface being a visor or a seat cover.

However, the courts have been held that a mere change of location of parts is generally recognized as being within the level of ordinary skill in the art. *In re Japikse*, 86 USPQ 70 (CCPA 1950).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to place the input device of Gillespie as modified by Pryor and Neuman on a visor or a seat cover of a vehicle, in order to provide multiple ways of accessing the input device to the occupants of the vehicle.

As to **claim 35**, all of the claim limitations have already been discussed with respect to the rejection of claim 27.

As to **claim 36**, Gillespie [fig. 2d] teaches the capacitive touch sensor (“*capacitive touch sensor pad*”) being an off-display capacitive touch sensor characterized by an absence of a display screen.

As to **claim 37**, Gillespie teaches the surface (“*insulating layer 36*”) [fig. 2d] being not a display screen.

As to **claim 38**, Gillespie as modified by Pryor and Neuman teaches the capacitive touch sensor comprising a projected capacitive touch sensor (the capacitive touch sensor of Gillespie is capable of detecting touches through dielectric layer) and the surface comprises an opaque surface (Gillespie: “*insulating layer 36*”) [Gillespie: fig. 2d].

As to **claim 42**, Gillespie as modified by Pryor and Neuman teaches the capacitive touch sensor being embedded in the airbag cover [Pryor: fig. 1c, the airbag cover is the cover of the center portion of the steering wheel].

5. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Gillespie, Pryor, Neuman as applied to claims 1-7, 9-11, 13-16, 28-38, and 42 above, and further in view of Nagasaka (US 2004/0195031).

Gillespie as modified by Pryor, Neuman teaches a capacitive touch sensor button.

Gillespie as modified by Pryor and Neuman teaches the capacitive coupling being calibrated to generate for the button one of a button down signal and a button up signal [col. 5 lines 31-33].

Gillespie as modified by Pryor, Neuman does not teach the capacitive touch sensor button being disposed within a spoke of the steering wheel.

However, Nagasaka [fig. 1] teaches a touch sensor button disposed within a spoke of the steering wheel.

It would have been obvious to one of ordinary skill in the art at the time of the invention to specify the device of Gillespie to be disposed within a spoke of a steering wheel, as taught by Nagasaka, in order to provide a convenient access to the inputting device.

6. **Claims 23 and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gillespie in view of Pryor.

As to **claim 23**, Gillespie teaches a method of making a touch input device (“*capacitive touch sensor*”) [abstract lines 1-3], comprising:

providing a capacitive touch sensor (“*capacitive touch sensor pad*”) configured so that a touch to a designated area of a surface (“*insulating layer 36*”) of the input device allows capacitive coupling between the touch and the touch sensor through the surface [col. 6 lines 28-32] [fig. 2d],

connecting the touch sensor to a controller (“*arithmetic unit*”) [col. 54 lines 29-37]; and using signals generated by the capacitive coupling to interact with electronic systems [col. 54 lines 29-37].

Gillespie does not expressly teach the method comprising providing an airbag cover configured for enclosing an airbag in a vehicle and for providing a finished surface, disposing the capacitive touch sensor on a back surface of the airbag cover opposing the finished surface, using the capacitive touch sensor to interact with one of radio controls, a heads-up display, a heating/cooling blower, a navigation system, and a hands-free phone of the vehicle.

However, Pryor teaches an idea of providing an airbag cover (the exterior surface of the steering wheel) [col. 7 lines 26-28] configured for enclosing an airbag in a vehicle and for providing a finished surface, disposing the capacitive touch sensor on a back surface of the airbag cover opposing the finished surface, using the capacitive touch sensor to interact with one of radio controls [col. 56 lines 22-24], a heads-up display, a heating/cooling blower, a navigation system, and a hands-free phone of the vehicle [abstract lines 1-6].

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Pryor’s idea of using a capacitive touch panel as an inputting means for a radio included in a vehicle, to the touch input device of Gillespie, in order to provide fast response of sensing

while maintaining immunity to high levels of electrical interference for a controlling means for electronics of a vehicle.

Gillespie as modified by Pryor inherently teaches configuring the capacitive touch sensor to minimally interfere with airbag deployment since it is required for any car to deploy the airbag included in a steering wheel when it is necessary, regardless of the type of the components or parts of the car included in the steering wheel and thus Pryor inherently teaches a concept of configuring the capacitive touch sensor (which is a component/part of the vehicle included in the steering wheel) to minimally interfere with airbag deployment.

As to **claim 27**, Gillespie as modified by Pryor teaches marking the designated area with a relief pattern.

Gillespie as modified by Pryor does not expressly disclose that the relief pattern can be discerned by a user's tactile senses.

However, the Examiner takes official notice that it is well known in the art to have a pattern, figure, or drawing such as a horn-shaped figure on a steering wheel that can be discerned by a user's tactile senses.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Gillespie as modified by Pryor to comprise a relief pattern on a designated area to be discerned by a user's tactile senses, in order to allow the user to find a location of the electronic components placed under the steering wheel cover, and thus to operate the electronic components easily.

7. **Claims 24, 25, and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gillespie and Pryor as applied to claims 23 and 27 above, and further in view of Reighard (US 5,423,569).

As to **claim 26**, Gillespie as modified by Pryor does not teach the step of disposing the capacitive touch sensor on the back surface of the airbag cover comprising disposing the touch sensor in a mold and molding the airbag cover using the mold so that the touch sensor is embedded in the back surface of the airbag cover.

However, Reighard [col. 5 lines 13-19] teaches a method of implementing an electronic component ("*force sensing resistor*") in an airbag comprising disposing an electronic component in a mold and molding the airbag cover using the mold so that the electronic component is embedded in the airbag cover.

It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the idea of Reighard to implement an electronic component in an airbag using a mold, in the device of Gillespie as modified by Pryor, and to specify the method of disposing the capacitive touch sensor on the airbag cover to comprise disposing the sensor in a mold and molding the airbag cover using the mold, as taught by Reighard, in order to simplify the manufacturing process for the airbag cover including the sensor by combining a molding process for the airbag cover and a process for implementing the sensor on the airbag cover into a single process.

As to **claims 24 and 25**, Gillespie as modified by Pryor does not teach the step of disposing a capacitive touch sensor on the back surface of the airbag cover comprising

transferring conductors forming the touch sensor from a decal layer to the back surface of the airbag cover or laminating the touch sensor to the back surface of the airbag cover.

However, as the Examiner acknowledges that the transferring or the laminating processes for disposing the sensor on the airbag cover, disclosed in claims 24 and 26 is not a required manufacturing process for the sensor implementation, but is one process out of many alternative manufacturing processes, it is an obvious matter of design choice to adopt such process in order to dispose the sensor on the airbag cover.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to adopt any one of methods such as transferring conductors forming the touch sensor from a decal layer to the back surface of the airbag cover, laminating the touch sensor to the back surface of the airbag cover, or molding the airbag cover using a mold including the sensor, since any one of the methods would perform equally well at disposing the capacitive touch sensor on the back surface of the airbag cover.

8. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Gillespie, Pryor, Neuman, and further in view of Pepper (US 4,755,634).

Gillespie as modified by Pryor and Neuman teaches the capacitive touch sensor being an x-y sensor, as discussed with respect to the rejection of claim 9.

Gillespie as modified by Pryor and Neuman does not teach the capacitive touch sensor being a quadrant segmented sensor.

However, Pepper [fig. 1] teaches an idea of building a capacitive touch senor by using a quadrant segmented sensor (“*quadrant electrodes 1, 2, 3, and 4*”).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the capacitive touch sensor of the touch input device of Gillespie as modified by Pryor and Neuman to use a quadrant segmented sensor as a sensing means instead of using an x-y sensor, in order to reduce the number of wires carrying the signals generated by the touch-input, and thus to simplify the structure of the circuitry of the touch input device.

9. **Claims 11 and 39-40** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gillespie, Pryor, Neuman, and further in view of Redmayne (US 5,650,597).

As to **claim 11**, Gillespie as modified by Pryor and Neuman teaches the capacitive touch sensor being an x-y sensor, as discussed with respect to the rejection of claim 9.

Gillespie as modified by Pryor and Neuman does not teach the capacitive touch sensor being a scroll bar sensor.

However, Redmayne [fig. 2] teaches an idea of building a capacitive touch sensor by using a scroll bar sensor [abstract lines 1-3].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the capacitive touch sensor of the touch input device of Gillespie as modified by Pryor and Neuman to use a scroll bar sensor as a sensing means instead of using an x-y sensor, to reduce proximity effects and noise [abstract lines 3-6].

As to **claim 39**, Gillespie as modified by Pryor, Neuman, and Redmayne teaches the scroll bar sensor comprising an analog slider scroll bar touch sensor (note that the capacitive touch sensor of Redmayne comprises a plurality of horizontal sensor **bars** detecting capacitance change, which is a characteristic of **analog** signal processing and detecting **horizontal movement** of touch) [col. 10 line 17 – col. 11 line 11].

As to **claim 40**, Gillespie as modified by Pryor, Neuman, and Redmayne teaches the scroll bar sensor comprising a set of discrete sensor pads (“*horizontal sensor bars*”) [abstract lines 1-3].

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEOKYUN MOON whose telephone number is (571)272-5552. The examiner can normally be reached on Mon - Fri (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

September 15, 2008
/S. M./
Examiner, Art Unit 2629

/Sumati Lefkowitz/
Supervisory Patent Examiner, Art Unit 2629